



No. \_\_\_\_\_ of \_\_\_\_\_

USAMV form 0109010104 (discipline code)

## SUBJECT OUTLINE

### 1. Information on the programme

1.1. Higher education institution	University of Agricultural Sciences and Veterinary Medicine of Cluj-Napoca
1.2. Faculty	Agriculture
1.3. Department	Plant culture
1.4. Field of study	Agronomic
1.5. Cycle of study <sup>1</sup>	Master
1.6. Specialization/ Study programme	Management of Natural and Ago-turistic Resources in the Mountain area
1.7. Form of education	IF

### 2. Information on the discipline

2.1. Discipline name		Mountain pratoecosystems						
2.2. Course coordinator				Professor Ioan Rotar				
2.3. Seminar/ laboratory/ project coordinator				Ioana Vaida PhD				
2.4. Year of study	I	2.5. Semester	1	2.6. Evaluation type	sumative	2.7. Discipline status	Content <sup>2</sup>	DD
							Compulsoriness <sup>3</sup>	DI

### 3. Total estimated time (teaching hours per semester)

3.1. Hours per week - full time programme	5	out of which: 3.2. lecture	2	3.3. seminar/ laboratory/ project	3
3.4. Total number of hours in the curriculum	70	out of which: 3.5. lecture	28	3.6. seminar/ laboratory	42
Distribution of the time allotted					<b>hours</b>
3.4.1. Study based on books, textbooks, bibliography and notes					35
3.4.2. Additional documentation in the library, electronic platforms and field experiences					40
3.4.3. Preparing seminars/ laboratories/ projects, subjects, reports, portfolios and essays					25
3.4.4. Tutorials					25
3.4.5. Examinations					12
3.4.6. Other activities					
3.7. Total hours of individual study	137				
3.8. Total hours per semester	207				
3.9. Number of credits <sup>4</sup>	7				

### 4. Prerequisites (if applicable)

4.1. curriculum-related	Botany, Agro-technical, Agroecology, Sociology
4.2. skills-related	The student must be knowledgeable in the field of pratology and know the species of plants representative for the grass culture

### 5. Conditions (if applicable)

5.1. for the course	The course is interactive, students can ask questions about the content of the exhibition. The university discipline requires the observance of the start and end time
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	of the course. No other activities are tolerated during the lecture, mobile phones should be closed
5.2. for the seminar/ laboratory/ project	In the practical works it is compulsory to consult the practical guide, each student will carry out an individual activity with the laboratory materials made available and described in the practical works guide. The academic discipline is required throughout the duration of the works

**Note: In the case of online teaching, the teaching methods are adapted to the online conditions and platforms used.**

## 6. Cumulated specific competences

Professional competences	To know the agronomic language specific to the pratotehnic field. To know the role of grasslands in ensuring the forage base. To know the meaning of the concepts: gross primary production, net and harvest. To know the limiting factors of grassland productivity. To know the means of increasing the productivity of grasslands and the factors that contribute to the degradation of the grass carpet. To appreciate the current state of the grasslands in the context of climate change.
Transversal competences	Demonstrate concern regarding professional development by engaging in investigations on technological impacts on the structure and dynamics of pratoecosystems To be able to define the role of grasslands in ensuring the forage base. To acquire dexterity for teamwork and interdisciplinary collaboration. To acquire knowledge regarding the support through the European subsidy system of high biological value meadows.

## 7. Discipline objectives (based on the cumulated specific competences)

7.1. General objective	The aim is to familiarize the master students with aspects regarding the productivity of the mountain meadow systems depending on the culture systems. A series of notions regarding the current situation of the meadows, in particular about the adverse impact of the abandonment, but also of other use systems, will be presented. Irrational effects on grassland vegetation.
7.2. Specific objectives	To know the role of grasslands in ensuring the forage base To know the factors that mirror the productivity / degradation state of a meadow that are the limiting factors and which are the means of increasing the productivity of the meadows.

## 8. Content

8.1. COURSE Number of hours -28	Teaching methods	Observation
		Lecture
The role of grasslands in ensuring the forage base	Lecture	1 lecture
Landscaping systems: extensive, industrial-intensive, sustainable (sustainable)	Lecture	3 lectures
Gross primary production, net and harvested in different grassland systems.	Lecture	2 lectures
Limiting factors of grassland productivity: floristic structure, soil acidity, etc.	Lecture	2 lectures
Means of increasing the production: changing the floristic composition, improving trophicity.	Lecture	2 lectures
Factors that contribute to grassland degradation: land abandonment, afforestation, erosion, etc.	Lecture	2 lectures

Meadow and climate change. Verification of knowledge	Lecture Check written	1 lecture 1 lecture
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8.2. PRACTICAL WORKS Number of hours – 28	Teaching methods	Observation
		Theoretical presentation of practical works
<b>Model of extensive use of meadows, presentation of types of meadows, extensive, their structure, directions of evolution</b>	Heuristic conversation debate; I work in a group	2 Laboratory work
<b>Model of intensive use of lawns, inputs-outputs, system characteristics</b>	Heuristic conversation debate; I work in a group	2 Laboratory work
<b>Model of sustainable (sustainable) use, characteristics, scenarios of use.</b>	Heuristic conversation debate; I work in a group	2 Laboratory work
<b>The study of the levels of accumulation of the organic substance in the grassland systems: the realization of the primary production and the harvest.</b>	Practical determinations	2 Laboratory work
<b>Case study: Evolution of secondary meadows of <i>Festuca rubra</i> towards afforestation.</b>	Heuristic conversation debate; I work in a group	2 Laboratory work
<b>Case study: Evolution of grasslands from steady state to degradation. Concrete examples, analyzes.</b>	Theoretical basis	2 Laboratory work
<b>Case study: Climate evolution and vegetation structure.</b>	Heuristic conversation debate; I work in a group	2 Laboratory work
<b>Verification of knowledge</b>	Check written	1 Laboratory work
<b>Compulsory bibliography:</b> 1. VIEHMANN I. I. (2001), <i>Ecologie</i> , Ed. Risoprint 2. PUJA I., SORAN V., ROTAR I., (1998), <i>Agroecologie, ecologism, ecologizare</i> , Ed. Genesis 3. PUJA I., SORAN V., CARLIER L., ROTAR I., VLAHOVA M., (2001), <i>Agroecologie si ecodezvoltare</i> , Ed., AcademicPress 4. ROTAR I., CARLIER L., (2010), <i>Cultura pajiștilor</i> , Ed. RisoPrint		
<b>Optional bibliography:</b> 1. Carlier, L., I. Puja, I. Rotar, <i>For a better grass production</i> , Ed. Risoprint, 2. Mac I., 2003, <i>Știința mediului</i> , Ed. EuroPontic, Cluj-Napoca 3. <i>Revista ProEnvironment</i>		

### 9. Corroborating the discipline content with the expectations of the epistemic community representatives, of the professional associations and of the relevant employers in the corresponding field

In order to identify ways of modernization and continuous improvement of the teaching and the content of the courses, with the most current topics and practical problems, the teachers participate in the annual meeting of the Romanian Society of Grasslands where they meet with the farmers, being debated current issues and perspectives. forage production in Romania and Europe

### 10. Evaluation

Type of activity	10.1. Evaluation criteria	10.2. Evaluation type	10.3. Percentage of the final grade
<b>10.4. Course</b>	The ability to define the role of grasslands. Knowledge of grassland use systems  Knowledge of the factors that mirror the productivity / degradation state of a meadow, the limiting factors and which are the means of increasing the productivity of the grassland	summative(E)	70%

<b>10.5. Seminar/Laboratory</b>	The ability to apply the theoretical notions learned in a case study. Organization of a feed production system in a farm or a commune (case study for each master) Presentation of the differences between intensive and extensive fodder systems.	1 written check is provided (case study).	30%
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**10.6. Minimum performance standards**

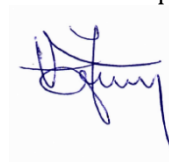
Mastery of scientific information transmitted through lectures and practical papers at an acceptable level. Obtaining the passing grade for the ongoing checks is a condition of promotability.

- 1 Cycle of studies - choose one of the three options: Bachelor/Master/Ph.D.
- 2 according to the educational plan
- 3 Discipline status (compulsoriness) - choose one of the options – **DI** (compulsory discipline) **DO** (optional discipline) **DFac** (facultative discipline).
- 4 One credit is equivalent to 25-30 hours of study (teaching activities and individual study).

Filled in on  
11.09.2020

Course coordinator  
Professor Ioan Rotar

Laboratory work/seminar coordinator  
Ioana Vaida PhD

Approved by the  
department on  
14.09.2020

Head of the Department  
Sef. lucr. dr. Cristina Moldovan

